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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/770,661	Applicant(s) SAY, SABIT	
	Examiner Harry Vartanian	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "a switching device" in Claim 34 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 401, 402, 404, and 406. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 42 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The dependency tree for Claim 30 already states in Claim 14 that the transmitters transmit at first and second frequency.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 19, 20 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. "A combiner" is not disclosed anywhere in the specifications.

5. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. "A switching device" is not disclosed anywhere in the specifications.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 40, 48, and 50-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 recites the limitation "the DSL signals". There is insufficient antecedent basis for this limitation in the claim.

Claim 48 recites the limitation "first transmission line... second transmission line". There is insufficient antecedent basis for this limitation in the claim. It is dependent on Claim 24 when it makes more sense if dependent on Claim 34. Appropriate correction is required. Any rejections below will assume that the Claim is dependent on Claim 34, NOT 24.

Claim 50 and 51 recite that they are ***method*** Claims dependent on 46 which is an ***apparatus*** claim. There is insufficient antecedent basis for this limitation in the claim. It makes more sense if Claims 50-51 were related to Claim 49 since it is a method Claim as opposed to 46 being an apparatus claim. Appropriate correction is required. Any rejections below will assume that the Claims 50 and 51 are dependent on Claim 49, NOT 46.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from

an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-6, 8-12, 14-15, 18-22, 25, 29-33, 41, 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Lindholm(US Patent# 6477207). Regarding Claim 1, Lindholm meets the following limitations:

> A method for providing data service to locations an extended distance **(Column 5, Lines 10-25)** from an access network, the method comprising:
>
> generating a downstream signal; **(Column 7, Lines 58-67)**
>
> providing the downstream signal to a first transmitter and a second transmitter; **(Column 8, Lines 10-24); See (Column 4, Lines 16-21) and fig 4, item 42 a1..an for the use of multiple transmitters**
>
> transmitting the downstream signal over media to a location; **fig 4**
>
> generating an upstream signal; providing the upstream signal to a first receiver and a second receiver; **Claim 9 for description of transceiver; See paragraph lines (Column 7, Lines 58-64) regarding the use of upstream channels.**
>
> and receiving the upstream signal over the media from the location. **See fig 4**

Moreover, it is noted that Lindholm states in his invention that his connection method uses a plurality of QAM modulators "that modulate the signals to different carrier frequencies." (Column 6, Lines 1-4) It is well known in the art that a modulator is substantially equivalent to a transmitter. Along the same lines, Lindholm discloses in figure 4, item 46 a bank of QAM demodulators. It is well known in the art that a demodulator is substantially equivalent to a receiver. Please take this into consideration for ALL rejections in this action.

Regarding Claim 2, Lindholm meets the following limitations:

> providing the downstream signal to the first transmitter, the second transmitter or a combination of the first transmitter and the second transmitter. **fig 8a;**

Regarding Claim 3, Lindholm meets the following limitations:

includes transmitting the downstream signal from the first transmitter, the second transmitter or a combination. **fig 8a**

Regarding Claim 4, Lindholm meets the following limitations:

wherein said transmitting the downstream signal includes transmitting the downstream signal from the first transmitter at a first frequency. **Fig 3; (Column 7, Lines 58-64)**

Regarding Claim 5, Lindholm meets the following limitations:

wherein said transmitting the downstream signal includes transmitting the downstream signal from the second transmitter at a second frequency. **Fig 3; (Column 7, Lines 58-64)**

Regarding Claim 6, Lindholm meets the following limitations:

wherein said transmitting includes transmitting the downstream signal from the first transmitter and the second transmitter over a same twisted wire pair. **Fig 4; (Column 6, Lines 5-15)**

Regarding Claim 8, Lindholm meets the following limitations:

upstream signal to the first receiver, the second receiver or a combination of the first receiver and the second receiver. **Claim 9; (Column 9, Lines 7-15); fig 4, item 46**

Regarding Claim 9, Lindholm meets the following limitations:

wherein said receiving the upstream signal includes receiving the upstream signal at the first receiver, the second receiver or a combination. **Claim 9; (Column 9, Lines 7-15); fig 4, item 46**

Regarding Claim 10, Lindholm meets the following limitations:

wherein said receiving the upstream signal includes receiving the upstream signal at the first receiver at a first frequency. **Claim 9; (Column 9, Lines 7-15) (Column 7, Lines 58-64) regarding upstream channel frequencies; fig 3**

Regarding Claim 11, Lindholm meets the following limitations:

wherein said receiving the upstream signal includes receiving the upstream signal at the second receiver at a second frequency. **Claim 9; (Column 9, Lines 7-15) (Column 7, Lines 58-64) regarding upstream channel frequencies; fig 3**

Regarding Claim 12, Lindholm meets the following limitations:

receiving the upstream signal at the first receiver and the second receiver over a same twisted wire pair. **Fig 4**

Regarding Claim 14, Lindholm meets the following limitations:

A transceiver**(Claim 9)** for use in an access network providing data services,

the transceiver including: a media connecting the access network to a location; **fig 1, fig 4**

a first transmitter for transmitting a first signal at a first frequency; **fig 3; (Column 7, Lines 58-64); fig 4, item 42 A1...An**

a second transmitter for transmitting the first signal at a second frequency; **fig 3; (Column 7, Lines 58-64); fig 4, item 42 A1...An**

a first receiver for receiving a second signal at a third frequency; **fig 3; (Column 7, Lines 58-64); fig 4, item 46 B1..Bn**

and a second receiver for receiving the second signal at a fourth frequency. **fig 3; (Column 7, Lines 58-64); fig 4, item 46 B1..Bn**

Regarding Claim 15, Lindholm meets the following limitations:

further comprising means for receiving the first signal. **(Claim 9); fig 8b**

Regarding Claim 18, Lindholm meets the following limitations:

the means for receiving splits the first signal and routes a first portion to the first transceiver and a second portion to the second transceiver **fig 8b; fig 7b**

Regarding Claim 19, Lindholm meets the following limitations:

further comprising a combiner for combining an output from the first transmitter and an output from the second transmitter. **Fig 4, item 43**

Regarding Claim 20, Lindholm meets the following limitations:

wherein an output from the combiner is transmitted over the media. **Fig 4; fig 7a**

Regarding Claim 21, Lindholm meets the following limitations:

wherein the media includes a twisted wire pair. **Fig 1**

Regarding Claim 22, Lindholm meets the following limitations:

further comprising means for routing the second signal to the appropriate receiver. **(Column 7, Lines 30-40); fig 8b; fig 7b**

Regarding Claim 25, Lindholm meets the following limitations:

wherein the means for routing is capable of splitting the second signal and routing a first portion to the first receiver and a second portion to the second receiver. **(Column 7, Lines 30-40); Claim 9; fig 7b**

Regarding Claim 29, Lindholm meets the following limitations:

> further comprising a combiner for combining an output of the first receiver and the second receiver. **(Fig 4, Item 47)**

Regarding Claim 30, Lindholm meets the following limitations:

> wherein the first frequency and the third frequency are the same. **(Column 7, Lines 30-40); see fig 8b; (Column 8, lines 53-65)**

Regarding Claim 31, Lindholm meets the following limitations:

> wherein the second frequency and the fourth frequency are the same. **(Column 7, Lines 30-40); see fig 8b; (Column 8, lines 53-65)**

Regarding Claim 32, Lindholm meets the following limitations:

> wherein the data services are DSL services. **Fig 1**

Regarding Claim 33, Lindholm meets the following limitations:

> wherein the transceiver is located either upstream or downstream. **Fig 4; fig 8a, 8b**

Regarding Claim 41, Lindholm meets the following limitations:

> wherein the first transmitter and the second transmitter are selectively adjustable. **(Column 5, Lines 55-67)**

Regarding Claim 42, Lindholm meets the following limitations:

> wherein the first transmitter transmits at a first frequency and the second transmitter transmits at a second frequency. **(Column 5, Lines 10-25); fig 3**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 7, 13, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm(US Patent# 6477207) in view of Lewin et al(US Patent# 6680940). Lindholm meets all the limitations of Claim 7 and 27(please see above paragraphs) except for disclosing the use of two separate twisted pair wires in parallel to transmit the data stream.

However, Lewin et al discloses an Ethernet to VDSL system that takes a serial Ethernet signal(see fig 2, item 42) and splits it up among multiple VDSL transceivers(see fig 2, items 30 and 32). Therefor it would have been prima facie obvious at the time the invention was made for Lindholm's VDSL system to use a DSL multiplexor in order to send VDSL signals over multiple twisted pair lines. The motivation to combine is that by multiplexing over a plurality of lines results in a greater overall data transmission capacity where as using only one line results in the need to share precious bandwidth.

Regarding Claims 13 and 28, it is obvious that there would a be receiver used to decode the multiplexing signals transmitted for the device disclosed by fig 2.

Regarding Claim 26, Lewin et al meets the following limitation:

wherein the media includes two sets of twisted wire pair. **fig 2**

9. Claim 16-17, 23-24, and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm(US Patent# 6477207) in view of Bahlenberg et al(WO #99/23764). Lindholm meets all the limitations of Claim 16-17, 23-24, and 46-47 (please see above paragraphs) except for disclosing the method of using certain transmitters or receiver frequencies based on the transmission line length.

However, Bahlenberg extended VDSL system meets the following Claim limitations:

> 16. The transceiver of claim 15, wherein the means for receiving routes the first signal to the first transmitter when the media is over a predetermined distance. **Pg. 7 lines 5-14 Pg. 3 lines 10-16;**
>
> 17. The transceiver of claim 15, wherein the means for receiving routes the first signal to the second transmitter when the media is under the predetermined distance. **Pg. 7 lines 5-14; Pg. 3 lines 10-16;**
>
> 23. The transceiver of claim 22, wherein the means for routing routes the second signal to the first receiver when the media is over a predetermined distance. **Pg. 7 lines 5-14 Pg. 3 lines 10-16;**
>
> 24. The transceiver of claim 22, wherein the means for routing routes the second signal to the second receiver when the media is under a predetermined distance. **Pg. 7 lines 5-14 Pg. 3 lines 10-16;**
>
> 46. The transceiver of claim 30, wherein the first transmitter is a low frequency transmitter and transmits DSL signals to a location which is not in close proximity. **Pg. 7 lines 5-14 Pg. 3 lines 10-16;**
>
> 47. The transceiver of claim 30, wherein the first transmitter is a high frequency transmitter and transmits DSL signals to a location which is not in close proximity. **Pg. 7 lines 5-14 Pg. 3 lines 10-16;**

Therefor it would have been prima facie obvious at the time the invention was made for Lindholm's VDSL system to choose carrier frequencies based on the distance of the transmission media. Lindholm alludes to this fact on Column 5, lines 11-25. The motivation to combine is specifically stated by Lindholm in the following statement:

> "It should be noticed that since attenuation in the cable increases quickly along with a growing frequency, a band on lower frequencies has a correspondingly better signal-to-noise ratio and..." **(Column 5, lines 11-25)**

It is also well known in the art that attenuation increases with cable or media length. Therefor Lindholm implies that it is advantageous to use lower frequency bands for longer distances since the attenuation would be less and vice-versa.

10. Claim 34 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm(US Patent# 6477207) in view of Lewin et al(US Patent# 6680940). Lindholm meets the following limitations of Claim 34:

> A transceiver**(Claim 9)** for providing DSL service over multiple lines or multiple frequencies**(Column 5, Lines 55-62)**, the transceiver comprising:
>
> a first transmitter; **(Column 6, Lines 1-4); fig 4 item 42**
>
> a second transmitter; **(Column 6, Lines 1-4); fig 4 item 42**
>
> an input line coupled to said first transmitter and said second transmitter and capable of selectively providing a signal to the first transmitter, the second transmitter, or both the first and second transmitter; **(Column 5, Lines 11-67) Lindholm states that his transceiver is adaptive; (Column 4, Lines 11-21)**

Lindholm fails to teach the use of two separate twisted pair wires in parallel to transmit the data stream and a switching device in order to select either one of the pairs.

However, Lewin et al discloses an Ethernet to VDSL system that takes a serial Ethernet signal(see fig 2, item 42) and splits it up among multiple VDSL transceivers(see fig 2, items 30, 32, 35). Therefor it would have been prima facie obvious at the time the invention was made for Lindholm's VDSL system to use a DSL multiplexor in order to send VDSL signals over multiple twisted pair lines. The motivation to combine is that by multiplexing over a plurality of lines results in a greater overall data transmission capacity where as using only one line results in the need to share precious bandwidth.

Regarding Claim 37, Lindholm meets the following limitations:

> wherein the frequency is a low range frequency. **fig 3**

11. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm(US Patent# 6477207) in view of Lewin et al(US Patent# 6680940) furtherer in view of Bahlenberg et al(WO #99/23764). Lindholm and Lewin et al meet all the limitations of

Claim 35 except for disclosing the method of using certain transmitters or receiver frequencies based on the transmission line length.

However, Bahlenberg extended VDSL system meets the following limitations:

> wherein when the DSL signals are being transmitted over a long distance, the second transmitter and the second receiver will be coupled to the second transmission line. **Pg. 7 lines 5-14 Pg. 3 lines 10-16;**

Therefor it would have been prima facie obvious at the time the invention was made for Lindholm's VDSL system to choose carrier frequencies based on the distance of the transmission media. Lindholm alludes to this fact on Column 5, lines 11-25. The motivation to combine is specifically stated by Lindholm in the following statement:

> "It should be noticed that since attenuation in the cable increases quickly along with a growing frequency, a band on lower frequencies has a correspondingly better signal-to-noise ratio and..." **(Column 5, lines 11-25)**

It is also well known in the art that attenuation increases with cable or media length. Therefor Lindholm implies that it is advantageous to use lower frequency bands for longer distances since the attenuation would be less and vice-versa.

12. Claims 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm(US Patent# 6477207). Lindholm meets all the limitations of Claims 37-39 except disclosing the specific frequencies of operation of the VDSL system. Lindholm discloses various bands used in VDSL in the tables found in column 4. Although Lindholm does not disclose the frequencies disclosed in Claims 36-39, these specifications are ***design choices***. There is no advantage or motivation to use such a disclosed frequency band since it is within the range defined by DSL standards.

13. Claim 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm(US Patent# 6477207) in view of Kaplan et al (US PUB 20020087976). Lindholm meets all the limitations of Claim 43, except for disclosing the use of two separate twisted

pair wires in parallel to transmit the data stream and determining when to use one or two lines.

However, Kaplan discloses the use of DSLAM which carriers out multiplexing techniques similar to that claimed in 43. More specifically, Kaplan states:

> "A DSLAM is a network device that receives signals from multiple subscribers' DSL connections (e.g., from a plurality of DSL modems) and multiplexes the signals for transport via a higher speed, higher bandwidth connection, e.g., ATM, IP, and so on." **(Paragraph 35); Also see Fig 5, Item 250**

Therefor it would have been prima facie obvious at the time the invention was made for Lindholm's VDSL system to use a DSL multiplexor in order to send VDSL signals over one or multiple twisted pair lines. The motivation to combine is that by multiplexing over a plurality of lines results in a greater overall data transmission capacity where as using only one line results in the need to share precious bandwidth.

Regarding Claim 44, Kaplan et al meets the following limitations:

> wherein the transceiver provides DSL service to multiple locations. **Para 22**

14. Claims 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm(US Patent# 6477207) in view of Bahlenberg et al(WO #99/23764). Regarding Claim 49, Lindholm meets the following limitations:

> A method for providing data communications between an access network and remote locations **fig 4**
>
> receiving a downstream signal; **fig 4**
>
> determining an appropriate frequency for transmission of the downstream signal; **(Column 4, line 11 to Column 5, line 67)**
>
> providing the downstream signal to a transmitter cable of transmitting the downstream signal at the appropriate frequency; and **(Column 4, line 11 to Column 5, line 67)**
>
> transmitting the downstream signal. **(Column 4, line 11 to Column 5, line 67)**

Lindholm meets all the limitations of Claim 50 except for disclosing the method of using certain transmitters or receiver frequencies based on the transmission line length.

However, Bahlenberg extended VDSL system meets the following limitations:

> wherein downstream signals traveling a large distance are transmitted at a lower frequency. **Pg. 7 lines 5-14 Pg. 3 lines 10-16;**

Therefor it would have been prima facie obvious at the time the invention was made for Lindholm's VDSL system to choose carrier frequencies based on the distance of the transmission media. Lindholm alludes to this fact on Column 5, lines 11-25. The motivation to combine is specifically stated by Lindholm in the following statement:

> "It should be noticed that since attenuation in the cable increases quickly along with a growing frequency, a band on lower frequencies has a correspondingly better signal-to-noise ratio and..." **(Column 5, lines 11-25)**

It is also well known in the art that attenuation increases with cable or media length. Therefor Lindholm implies that it is advantageous to use lower frequency bands for longer distances since the attenuation would be less and vice-versa.

Regarding Claim 51, Lindholm meets the following limitations:

> wherein said determining includes determining that the downstream signal should be transmitted at multiple frequencies. **(Column 4, line 11 to Column 5, line 67)**

Double Patenting

15. Applicant is advised that should Claim 44 be found allowable, Claim 45 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 9-5:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian
Examiner
Art Unit 2634

HV

STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600